This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A multiband data communication apparatus which receives signals by switching a plurality of frequency bands in response to a band switching signal, said multiband data communication apparatus comprising:

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal, said quadrature demodulating means including:

a pair of first quadrature mixers for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal;

local oscillating means for producing a local oscillation signal; and

phase shifting means for shifting a phase of said local oscillation signal based upon said band switching signal to thereby supply the phase-shifted local oscillation signal to said first quadrature mixers.

Claim 2 (currently amended): A multiband data communication apparatus which transmits signals by switching a plurality of frequency band in response to a band switching signal, said ~~mutliband~~ multiband data communication apparatus comprising:

quadrature modulating means for converting a quadrature transmission baseband signal into either a

transmission signal or a transmission intermediate frequency signal, said quadrature modulating means including:

a pair of second quadrature mixers for converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal;

local oscillating means for producing a local oscillation signal; and

phase shifting means for shifting a phase of said local oscillation signal based upon said band switching signal to thereby supply the phase-shifted local oscillation signal to said second quadrature mixers.

Claim 3 (original): A multiband data communication apparatus comprising:

quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal;

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal; and

local oscillation signal producing means for supplying a local oscillation signal to both said quadrature modulating means and said quadrature demodulating means, for transmitting/receiving by switching a plurality of frequency bands in response to a band switching signal,

wherein said quadrature demodulating means includes a pair of first quadrature mixers for converting either the reception signal or the reception

intermediate frequency signal into a reception baseband signal;

said quadrature modulating means includes a pair of second quadrature mixers for converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal; and

said local oscillation signal producing means includes local oscillating means for producing a local oscillation signal, and

phase shifting means for shifting a phase of said local oscillation signal based upon said band switching signal to thereby supply the phase-shifted local oscillation signal to said first quadrature mixers and said second quadrature mixers.

Cl Cont.

Claim 4 (original): A multiband data communication apparatus as claimed in claim 1, 2, or 3, wherein said phase shifting means supplies a signal obtained by shifting the phase of said local oscillation signal by $\pi/2$ to one of said first quadrature mixers and said second quadrature mixers, while said phase shifting means supplies one of said local oscillation signal and a signal obtained by inverting a code of said local oscillation signal to the other of said first quadrature mixers and said second quadrature mixers in response to said band switching signal.

Claim 5 (original): A multiband data communication apparatus as claimed in claim 1, 2, or 3, wherein said phase shifting means supplies said local oscillation signal to one of said first quadrature mixers and said second quadrature mixers; while said phase shifting means supplies one of a signal obtained by shifting the phase of said local oscillation signal by $\pi/2$ and a signal obtained by shifting

the phase of said local oscillation signal by π/2 and by inverting said phase-shifted local oscillation signal to the other mixer of said first quadrature mixers and said second quadrature mixers in response to said band switching signal.

Claim 6 (original): A multiband data communication apparatus as claimed in claim 1, 2, or 3, wherein phase shifting means supplies said local oscillation signal to one of said first quadrature mixers and said second quadrature mixers, while said phase shifting means supplied one of a signal obtained by delaying the phase of said local oscillation signal by π/2 and a signal obtained by advancing the phase of said local oscillation signal by π/2 to the other of said first quadrature mixers and said second quadrature mixers in response to said band switching signal.

Claim 7 (original): A multiband data communication apparatus which receives signals by switching a plurality of frequency bands in response to a band switching signal, said multiband data communication apparatus comprising:

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into quadrature reception baseband signal, said quadrature demodulating means including:

a pair of first quadrature mixers for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal;

storage means for saving thereinto discrete data of a frequency pattern component functioning as a base;

address generating means for generating an address every preselected clock;

phase shift means for adding a predetermined number based upon said band switching signal to said address;

first analog converting means for analog-converting data which is read out by addressing said storage means based on the address outputted from said address generating means to thereby supply the analog-converted data to one of said first quadrature mixers; and

second analog converting means for analog-converting data which is read out by addressing said storage means based on the output of said phase shift means to thereby supply the analog-converted data to the other of said first quadrature mixers.

Claim 8 (original): A multiband data communication apparatus which transmits signals by switching a plurality of frequency band in response to a band switching signal, said multiband data communication apparatus comprising:

quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal, said quadrature modulating means including-.

a pair of second quadrature mixers for converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal;

storage means for saving thereinto discrete data of a frequency pattern component functioning as a base

address generating means for generating an address every preselected clock;

phase shift means for adding a predetermined number based upon said band switching signal to said address;

first analog converting means for analog-converting data which is read out by addressing said storage means based on the address outputted from said address

generating means to thereby supply the analog-converted data to one of said second guadrature mixers; and

second analog converting means for analog-converting data which is read out by addressing said storage means based, on the output of said phase shift means to thereby supply the' analog-converted data to the other of said second quadrature mixers.

Claim 9 (original): A multiband data communication apparatus comprising:

quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal;

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal; and

local signal producing means for supplying a local oscillation signal to both said quadrature modulating means and said quadrature demodulating means, for transmitting /receiving by switching a plurality of frequency bands in response to a band switching signal,

wherein: said quadrature demodulating means includes a pair of first quadrature mixers for converting either the', reception signal or the reception intermediate frequency signal into a reception baseband signal;

said quadrature modulating means includes a pair of second quadrature mixers for converting a transmission baseband signal into either the

transmission signal or the transmission intermediate frequency signal; and

said local oscillation signal producing means includes storage means for saving thereinto discrete data of a frequency

pattern component functioning as a base; address generating Means for generating an address every preselected clock; phase shift means for adding a predetermined. number based upon said band switching signal to said address; first analog converting means for analog-converting data which is read out by addressing' said storage means based on the address outputted from said address generating means to thereby supply the analog-converted data to one of said first quadrature mixers; and second analog converting means for analog-converting data which is read out by addressing said storage means based on the output of said phase shift means to thereby supply the analog-converted data to the other of said first quadrature mixers.

Claim 10 (original): A multiband data communication apparatus as claimed in claim 7, 8, or 9, wherein either said quadrature modulating means or said local oscillation signal producing means includes clock generating means for generating a clock signal;' and interval determining means for determining a clock interval used to read out data from said storage means so as to control the address generating operation of said address generating means.

Claim 11 (currently amended): A communication method of a multiband data communication apparatus including quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature

reception baseband signal, for receiving by switching a plurality of frequency bands in response to A band switching signal, said communication method comprising the steps of:

producing a local oscillation signal; and

shifting a phase of said local oscillation signal in response to said band switching signal to thereby supply the phase-shifted local oscillation signal to a first quadrature mixer for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal.

Claim 12 (original): A communication method of a multiband data communication apparatus including quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal, for transmitting by switching a plurality of frequency band in response to a band switching signal, said communication method comprising the steps of:

producing a local oscillation signal; and

shifting a phase of said local oscillation signal in response to said band switching signal to thereby supply the phase-shifted local oscillation signal to a second quadrature mixer for converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal.

Claim 13 (original): A communication method of a multiband data communication apparatus including quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal; and quadrature demodulating means for converting either a reception signal or

a reception intermediate frequency signal into a quadrature reception baseband signal; which transmits and receives signals by switching a plurality of frequency bands in response to a band switching signal, said communication method comprising the steps of:

producing a local oscillation signal; and

shifting a phase of said local oscillation signal in response to the band switching signal to thereby supply the phase-shifted local oscillation signal to one of a first quadrature mixer and a second quadrature mixer, said first quadrature mixer converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal, and said second quadrature mixer converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal.

Claim 14 (original): A communication method of a multiband data communication apparatus as claimed in claim 11, 12, or 13, wherein said phase shifting step includes:

a first supplying step for supplying a signal which is obtained by shifting the phase of said local oscillation signal. by π/2 to one of said first quadrature mixer and said second quadrature mixer;

an inverting step for inverting a code of said local oscillation signal; and

a second supplying step for supplying one of said local oscillation signal and the output signal of said inverting step to the other of said first quadrature mixer and said second quadrature mixer in response to said band switching signal.

Claim 15 (original): A communication method of a

multiband data communication apparatus as claimed in claim 11, 12, or 13, wherein said phase shifting step includes:

a first supplying step for supplying said local oscillation signal to one of said first quadrature mixer and said second quadrature mixer;

a phase shifting step for shifting the phase of said local oscillation signal by π/2;

an inverting step for inverting a code of said output signal of said phase shifting step; and

a second supplying step for supplying one of said output signal of said phase shifting step and the output signal of said inverting step to the other of said first quadrature mixer and said second quadrature mixer in response to said band switching signal.

Claim 16 (original): A communication method of a multiband data communication apparatus as claimed in claim 11, 12, or 13, wherein said phase shifting step includes:

a first supplying step for supplying said local oscillation signal to one of said first quadrature mixer and said second quadrature mixer;

a phase delaying step for delaying the phase of said local oscillation signal by π/2;

a phase advancing step for advancing the phase of said local oscillation signal by π/2; and

a second supplying step for supplying one of the output signal of said phase delaying step and the output signal of said phase advancing step to the other of said first quadrature mixer and said second quadrature mixer in response to said band switching signal.

Claim 17 (original): A communication method of a

multiband data communication apparatus including quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal, for receiving by switching a plurality of frequency bands in response to a band switching signal, said communication method comprising:

a storing step for saving thereinto discrete data, of a frequency pattern component functioning as a base;

an address generating step for generating an address every preselected clock;

a phase shifting step for adding a predetermined number based upon said band switching signal to said address;

a first analog converting step for analog-converting', data which is read out by addressing said storing step based on the address outputted from said address generating step to thereby supply the analog-converted data to one of first quadrature mixers for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal; and

a second analog converting step for analog-convening data which is read out by addressing said storing step based on the output of said phase shifting step to thereby supply the analog-converted data to the other of said first quadrature mixers.

Claim 18 (original): A communication method of a multiband data communication apparatus including quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal, for transmitting by switching a plurality of frequency band in response to a band switching signal, said communication method comprising:

a storing step for saving thereinto discrete data of a frequency pattern component functioning as a base;

an address generating step for generating an address every preselected clock;

a phase shifting step for adding a predetermined number based upon said band switching signal to said address;

a first analog converting step for analog-converting data which is read out by addressing said storing step based on the address outputted from said address generating step to thereby supply the analog-converted data to one of second quadrature mixers for converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal; and

a second analog converting step for analog--converting data which is read out by addressing said storing step based on the output of said phase shifting step to thereby supply the analog-converted data to the other of said second quadrature mixers.

Claim 19 (original): A communication method of a multiband data communication apparatus including quadrature modulating means for converting a quadrature transmission baseband signal into either a transmission signal or a transmission intermediate frequency signal; and quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal; and for transmitting /receiving by switching a plurality of frequency bands in response to a band switching signal, said communication method comprising:

a storing step for saving thereinto discrete data of a frequency pattern component functioning as a base;

an address generating step for generating an address every preselected clock;

a phase shifting step for adding a predetermined number based upon said band switching signal to said address;

a first analog converting step for analog-converting data which is read out by addressing said storing step based on' the address outputted from said address generating step to thereby supply the analog-converted data to one of a first quadrature mixer and a second quadrature mixer, said first quadrature mixer converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal, and a second quadrature mixer converting a transmission baseband signal into either the transmission signal or the transmission intermediate frequency signal; and

a second analog converting step for analog-converting data which is read out by addressing said storing step based on the output of said phase shifting step to thereby supply the analog-converted data to the other of said first quadrature mixer and said second quadrature mixer.

Claim 20 (original): A storage medium for storing thereinto a computer readable program used to execute the communication method of the multiband data communication apparatus as recited in claim 11, 12, 13, 14, 15, 16, 17, 18, or 19.

21. (new) A multiband data communication apparatus which receives signals by switching a plurality of frequency bands in response to a band switching signal, said multiband data communication apparatus comprising:

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal, said quadrature demodulating means including:

a pair of first quadrature mixers for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal;

local oscillating means for producing a local oscillation signal;

phase shifting means for shifting a phase of said local oscillation signal for input to one of said pair of first quadrature mixiers; and

means for optionally changing a phase of said local oscillation signal for input to another of said pair of first quadrature mixers based upon said band switching signal to thereby ensure correct polarities of quadrature components of said reception baseband signal.

Claim 22 (new): A multiband data communication apparatus which receives signals by switching a plurality of frequency bands in response to a band switching signal, said multiband data communication apparatus comprising:

quadrature demodulating means for converting either a reception signal or a reception intermediate frequency signal into a quadrature reception baseband signal, said quadrature demodulating means including:

a pair of first quadrature mixers for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal;

local oscillating means for producing a local oscillation signal; and

phase shifting means for shifting a phase of said local oscillation signal to ensure consistent polarities of quadrature components of said reception baseband signal irrespective of an operating band of the apparatus.